

**CHEMICAL MECHANICAL POLISHING SLURRY  
AND PROCESS FOR RUTHENIUM FILMS**

**ABSTRACT OF THE DISCLOSURE**

5       A CMP slurry for ruthenium and a polishing process using the same. In a process technology below 0.1  $\mu\text{m}$ , when a capacitor using a  $(\text{Ba}_{1-x}\text{Sr}_x)\text{TiO}_3$  film as a dielectric film is fabricated, the slurry is used to polish a ruthenium film deposited as a lower electrode according to a CMP process. The CMP process is performed by using the slurry, to improve a polishing speed of ruthenium under a low polishing

10      pressure. In addition, the CMP process is performed according to an one-step process by using one kind of slurry. As a result, defects on an insulating film are reduced and a polishing property is improved, thereby simplifying the CMP process.

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